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Information Sheet on Ramsar Wetlands (RIS)

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Designation date Site Reference Number

2. Date this sheet was completed/updated: 15 May 2002

3. Country: France

4. Name of the Ramsar site: Marais du Fier d'Ars

5. Map of site included:

(a) **hard copy:** yes -or- no

(b) **digital format:** yes -or- no

6. Geographical coordinates: 01° 28' West longitude - 46° 13' North latitude

7. General location: This site is located on the île de Ré in the department of Charente-Maritime in the Poitou-Charente region of France. The administrative centre of the department is La Rochelle, approximately 25 kilometres distant. The site is in the communes of Les-Portes-en-Ré, Saint-Clément-des-Baleines, Ars-en-Ré, Loix-en-Ré, La Couarde-sur-Mer and Saint-Martin-de-Ré, with a total of 6600 inhabitants.

8. Elevation: minimum elevation: -6 metres; maximum elevation: +18 metres

9. Area: 4452 hectares

10. Overview: Located on the île de Ré in the department of Charente-Maritime, this site is a large coastal complex associating two main complementary functional ecological environments: the large mud and sand banks exposed at low tide of the Fier d'Ars and the Fosse de Loix and a complex of dyked marshes forming a very diversified mosaic of environments—active or abandoned salt marshes, freshwater marshes with rushes and reeds, basins exploited for aquaculture and meadows for extensive livestock raising. This site also includes a partially wooded dune area, a group of rocky and sandy coasts and an intertidal area. Many of these habitats are considered endangered in Europe and give the site importance at the European community level. The overall site also constitutes an area of international

importance for migratory and wintering waterfowl because of its location on the main Eastern Atlantic migration route.

11. Ramsar Criteria: Criteria 2, 3, 5 and 6

Criterion 5 best characterizes the site.

12. Justification for the application of each Criterion listed in 11. above:

Criterion 2: This wetland can be considered of international importance because it provides habitat for a large number of endangered species and ecological communities.

Vulnerable or endangered habitats: Habitats listed on the E.U. Directive on Habitats: Coastal lagoons (1150), mudflats and sandflats not covered by sea water at low tide (1140), *Salicornia* and other annuals colonizing mud and sand (1310), Atlantic salt meadows (1330), Atlantic salt meadows with *Elymus pycnanthus* (1330), Mediterranean salt meadows (1410), Mediterranean and thermo-Atlantic halophilous scrubs (1420), embryonic shifting dunes (2110), shifting dunes (2120), “grey dunes” (2130), dunes with *Salicornia arenariae* (2170) and wooded dunes with *Pinus pinaster* (2270).

Other habitats: The grasslands of zostère naine (*Zostera noltii*) found on the mudflats of Fier d'Ars and Fosse de Loix are a determinant element of the importance of the site (refuge for invertebrate communities, role of oxygenation of the water, a food resource for wintering Brent geese).

Vulnerable or endangered plants:

Asparagus (<i>asperge couchée</i>)	<i>Asparagus officinalis</i> ssp. <i>prostrates</i>	Regional protection
Oeillet des dunes	<i>Dianthus gallicus</i>	National protection
Vipérine pourpre	<i>Echium plantagineum</i>	Regional protection
Linaire des sables	<i>Linaria arenaria</i>	Regional protection
Euphrase de Jaubert	<i>Odontites jaubertiana</i> ssp. <i>Jaubertiana</i>	National protection
Cynoglosse des dunes	<i>Omphalodes littoralis</i>	National protection; This is a priority species under the E.U. Directive on Habitats and is endemic to the French Atlantic coast
Renoncule à feuilles trilobées	<i>Ranunculus trilobus</i>	Regional protection
Scrofulaire à feuilles de germandrée	<i>Scrophularia scorodonia</i>	Regional protection
Trèfle étoilé	<i>Trifolium stellatum</i>	Regional protection

Vulnerable or endangered fauna:

Birdlife: This site provides habitat for a large number of species considered vulnerable at the European level.

Conservation Status of Species Recorded at the Proposed Site

Birds	Conservation status in Europe	Endangered status in Europe	Annex I European Directive on Wild Birds
Red-throated diver (<i>Gavia stellata</i>)	3	V	X
Black-throated diver (<i>Gavia arctica</i>)	3	V	X
Great Northern diver (<i>Gavia immer</i>)			X
Slavonian grebe (<i>Podiceps auritus</i>)			X
Little egret (<i>Egretta garzetta</i>)			X
Great egret (<i>Casmerodius alba</i>)			X
Oriental stork (<i>Ciconia boyciana</i>)	2	V	X
White spoonbill (<i>Platalea leucorodia</i>)	2	ED	X
Dark-bellied Brent goose (<i>Branta bernicla bernicla</i>)	3	V	
Barnacle goose (<i>Branta leucopsis</i>)			X
Common pintail (<i>Anas acuta</i>)	3	V	
Garganey teal (<i>Anas querquedula</i>)	3	V	
Gadwall (<i>Anas strepera</i>)	3	V	
Western marsh-harrier (<i>Circus aeruginosus</i>)			X
Marsh hawk (<i>Circus cyaneus</i>)	3	V	X
Montagu's harrier (<i>Circus pygargus</i>)			X
Osprey (<i>Pandion haliaetus</i>)	3	R	X
Peregrine falcon (<i>Falco peregrinus</i>)	3	R	X
Common kestrel (<i>Falco tinnunculus</i>)	3	D	
Black-winged stilt (<i>Himantopus himantopus</i>)			X
Avocet (<i>Recurvirostra avosetta</i>)	3	L	X
Kentish plover (<i>Charadrius alexandrinus</i>)	3	D	
Dunlin (<i>Calidris alpina</i>)	3	V	
Bar-tailed godwit (<i>Limosa lapponica</i>)	3	L	
Bar-tailed godwin (<i>Limosa limosa</i>)	2	V	
Eurasian curlew (<i>Numenius arquata</i>)	3	D	
Common redshank (<i>Tringa tetanus</i>)	2	D	
Wood sandpiper (<i>Tringa glareola</i>)	3	D	X
Mediterranean gull (<i>Larus melanocephalus</i>)			X
Common gull (<i>Larus canus</i>)	2	D	
Sandwich tern (<i>Sterna sandvicensis</i>)	2	D	X
Caspian tern (<i>Sterna caspia</i>)	3	ED	X
Species	Conservation status in Europe	Endangered status in Europe	Annex I European Directive on Wild Birds
Little tern (<i>Sterna albifrons</i>)	3	D	X
Black tern (<i>Chlidonias niger</i>)	3	D	X
Chouette effraie (<i>Tyto alba</i>)	3	D	
Short-eared owl (<i>Asio flammeus</i>)	3	D	X
Kingfisher (<i>Alcedo atthis</i>)	3	D	X
Sky lark (<i>Alauda arvensis</i>)	3	V	
Bank swallow (<i>Riparia riparia</i>)	3	D	
Common swallow (<i>Hirundo rustica</i>)	3	D	

Common stonechat (<i>Saxicola torquata</i>)	3	D	
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Source: According to Tucker and Heath, 1994

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|----|------------|--|
| ED | Endangered | 1. Endangered population whose future depends on protection measures. |
| R | Rare | 2. European population whose conservation status is unfavourable. |
| V | Vulnerable | 3. World population whose conservation status is unfavourable in Europe. |
| D | Declining | |

Reptiles: This site provides habitat for the pélobate cultripède (*Pelobates cultripedes*), crapaud calamite (*Bufo calamita*) and the rainette méridionale (*Hyla meridionalis*). All three species are considered vulnerable in Europe.

Others: Presence of the eel (*Anguilla anguilla*) in the diked marshes. This species is listed in the Red List of Endangered Species in France and is in decline throughout its area of distribution.

Criterion 3: This wetland can be considered of international importance because it provides habitat for populations of species of animals and plants important for maintenance of biological diversity, notably the cynoglosse des dunes (*Omphalodes littoralis*), a plant endemic to the shores of the central-western Atlantic part of France (several thousand to several tens of thousands of specimens); and Nantes bluethroat (*Luscinia svecica namnetum*), a taxon endemic to the French Atlantic coast (150 to 200 nesting pairs).

Criterion 5: This wetland can be considered of international importance because it frequently provides habitat for 20,000 or more birds. Populations of waterfowl wintering from October to March exceed more than an average of 31,000 specimens.

Average populations recorded (October to March)

Cormorants, herons, spoonbills	1,758
Grebes, ducks, coots	3,527
Brent goose	6,838
Shorebirds	15,515
Gulls	4,000
TOTAL	31,638

Criterion 6: This wetland can be considered of international importance because it regularly provides habitat for more than one per cent of the specimens of populations of the following waterfowl.

Criteria for evaluation of the importance of the proposed site for wintering birds

Species	Average populations (October-March) (1992-2002)	Monthly average maximum (1992-2002)	Maximum populations recorded (1992-2002)	Ramsar criterion
Dark-bellied Brent goose (<i>Branta bernicla bernicla</i>)	6838	12,097 (November)	19,620	3000
Avocette élégante (<i>Recurvirostra avoseta</i>)	485	855 (January)	1835	600
Pluvier argenté (<i>Pluvialis squatarola</i>)	1065	1511 (January)	2357	1300
Bécasseau variable (<i>Calidris alpina</i>)	10,121	13,314 (December)	20,180	13,500
Barge à queue noire islandaise (<i>Limosa limosa islandica</i>)	510	1065 (October)	2800	1100

See the annexes.

13. Biogeography:

(a) biogeographic region:

(b) biogeographic regionalisation scheme:

14. Physical features of the site: Geology, geomorphology and origin: The site is formed by four former islands (Portes, d'Ars, Loix and Ré) located on Jurassic calcareous shelves and joined together by dried (terrestrial part) or emergent (maritime part) Quaternary deposits. The soils of the diked marshes, created by marine mud sedimentation, remain more or less saline. In the northern part of the site, the beach of La Conche des Baleines is eroded in favour of the Banc du Bûcheron, a real sandy breakwater emergent at low tide at the entrance to the bay of Fier d'Ars. Sand is trapped in the Fier Bay, contributing to its progressive filling-in with sand. The group of diked marshes is anthropomorphic in origin; the result of successive polderization carried out between the sixteenth and nineteenth centuries. They are located under the level of the open sea.

Hydrology: The bays of Fier d'Ars and Fosse de Loix are emptied or flooded by the tides. Between each flux the current stabilizes at the exit from the bay. In the diked salt marshes, movement of the water is regulated by the engineering works that control the entry and exit of seawater or water from channels. Water circulates by gravity between the basins, and evacuation is through channels called *écours*. In the freshwater marshes, water comes from the network for irrigating fields of potatoes, winter precipitation or the freshwater water table such as that of the Conche dune system.

Soil type and chemistry: The rocky tables are made up of calcareous rocks and Kimmeridgian marls. The soils of the diked marshes are formed by sedimentation of marine mud.

Depth, fluctuations and permanence of the water: Most of the marine part of the site is located above mean sea level; in other words it is emerged at lowest tides. The

northern extremity of the site (beyond the Banc du Bûcheron) rises to an elevation of five metres under sea level. The diked marshes are shallow (average depth of 50 centimetres; maximum depth of one metre). The diked salt marshes are permanently flooded if they are regularly fed by seawater. Located on the bottom of the bay, they are fed primarily by high tides. Most of the freshwater marshes (unconnected to the saltwater network) emerge temporarily and dry out at the end of the summer.

Climate: May to August is marked by a water deficit. Three factors make the climate of this area relatively mild and dry:

- The Gulf Stream is a mitigating factor
- Mild and humid dominant westerly winds
- The flat topography of the island does not cause precipitation

Monthly average temperature and precipitation

Month	J	F	M	A	M	J	J	A	S	O	N	D
Temperature (°C)	6.6	7.5	10	13	15.1	19.1	20,6	21	19	14.8	9.7	6.7
Precipitation (mm)	67	52	42	42	41	34	34	32	43	66	88	84

Source: INRA, Domaine expérimental de St Laurent de la Prée

15. Physical features of the catchment area:

16. Hydrological values: There is heavy marling and water dynamics. Trapped sediments lead to the silting-in of the bays with mud and sand. Cultivated fields and upstream inhabited areas are protected against flooding by dyked marshes, dunes and protecting forests. Pollution (especially organic pollution) is fixed.

17. Wetland types:

(a) **presence:** Marine/Coastal Wetlands

- A. Permanent shallow marine waters
- B. Marine subtidal aquatic beds
- D. Rocky marine shores
- E. Sand, shingle or pebble shores
- G. Intertidal mud, sand or salt flats
- H. Intertidal marshes
- J. Coastal brackish/saline lagoons

Human-made wetlands

1. Aquaculture (e.g., fish/shrimp) ponds
5. Salt exploitation sites

(b) dominance: G, J, 5, D, E, B, A, 1, H

18. General ecological features: There are intertidal habitats (sandy beaches, sandy banks, mudflats and salt meadows), lagoon habitats (dyked salt marshes) and dune habitats (mobile, fixed and wooded dunes).

19. Noteworthy flora: There are rare or endangered vascular plants in a dune environment: *Asparagus officinalis* ssp. *prostratus*, *Dianthus gallicus*, *Omphalodes littoralis* and in the dyked marshes (*Ranunculus trilobus*, *Trifolium stellatum*).

20. Noteworthy fauna: The marshes of the Fier d'Ars, located on the main Eastern Atlantic flyway, make up an area of international importance for migrating and wintering birds. The exceptional character of the site is reflected by the abundance of species, with almost 300 species of birds recorded, which is more than 50 per cent of European birdlife. This whole sector is classified as a Zone d'Intérêt Communautaire pour les Oiseaux (ZICO) and as a Special Protection Areas (SPA) under the E.U. Directive on Wild Birds. This site is recognized as having international importance especially for the following wintering populations:

- Dark-bellied Brent goose (*Branta bernicla bernicla*),
- Avocet (*Recurvirostra avoseta*),
- Black-tailed godwit (*Limosa limosa islandica*),
- Grey plover (*Pluvialis squatarola*),
- Common snipe (*Calidris alpina*).

The Fier d'Ars marshes also have a special importance for wintering (up to 12 specimens) and stopover (up to 34 specimens) of spoonbill (*Platalea leucorodia*). In addition, the site is outstanding for the reproduction of several rare or endangered species in France and Europe:

- Marsh harrier (*busard des roseaux*) (*Circus aeruginosus*) (12-18 couples),
- Black-winged stilt (*echasse blanche*) (*Himantopus himantopus*) (up to 105 couples),
- Avocet (*avocette élégante*) (*Recurvirostra avosetta*) (35-103 couples),
- Common tern (*sterne pierre-garin*) (*Sterna hirundo*) (24-129 couples),
- Bluethroat (*gorgebleue de Nantes*) (*Luscinia svecica namnetum*) (150-200 couples).

In addition to the birdlife, this site provides habitat for several species of amphibians that are rare or endangered in Europe: crapaud calamite (*Bufo calamita*), pélobate cultripède (*Pelobates cultripedes*) and rainette méridionale (*Hyla meridionalis*). It is an important habitat for the eel (*Anguilla anguilla*) (a species in rapid decline at the international level, listed in the Red List of Endangered Species for France).

21. Social and cultural values: This site is very important for tourism (seaside resort, nautical and ecotourism). There are recreational activities (hunting, angling

and casting, horse riding, cycling). Hunting contributes to the maintenance of the quality and diversity of the dyked marshes (through maintenance of the freshwater marshes). The pressure of tourism and angling can be harmful to ecological interests (trampling of the dunes, disturbance and competition with the birdlife) but their impact has not been measured.

22. Land tenure/ownership: The maritime areas belong to the public maritime domain with the exception of former dyked marshes recaptured by the sea (for example, La Lasse), which have retained a private status. The dune and forest space belongs to the government and is managed by the Office National des Forêts. The dyked marshes are mainly private property but the government, through the Conservatoire de l'Espace Littoral and de Rivages Lacustres, has pursued a policy of acquisition since the end of the 1970s.

23. Current land (including water) use: Existing development schemes and regulatory measures (classified site) reduce human pressure, especially in the area of urbanization, and only a few houses are found on the site. The resident population on the rest of the île de Ré is increasing (more than 13,000 inhabitants) and the summer population is very large (up to 180,000 inhabitants). Land use at the proposed site results partially from their exploitation within the activities of the primary sector: salt extraction (251 hectares in 2001), oyster farming (oyster beds in the intertidal zone) (257 hectares), fattening ponds in the dyked marshes (81 hectares), fish farming (extensive and intensive) and extensive livestock raising. Growth of oyster farming constitutes a local potential risk of impoverishing the biology of the dyked marshes (construction of fattening ponds could lead to the loss of immersed meadows of Ruppies and bird habitats) and accelerates the phenomena of filling-in of the marine mudflats. Extraction of salt and extensive fish farming promote the maintenance of the biological resources of the site (continuation of maintenance and the hydrological functioning of the marshes and maintenance of their biological characteristics).

24. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects: In the sea portion of the proposed site, the filling-in of the bays (Fier d'Ars and Fosse de Loix) is likely to reduce the areas required for feeding migratory and wintering waterfowl populations in a short time. This phenomenon could also jeopardize the hydrological functioning of the dyked marshes (blocking of the sea water intakes). Inversely, erosion by the sea affects most of the dune systems. Organic pollution is the result of sewage. Angling in the intertidal zone and, to a lesser degree, boats constitute unevaluated factors of disturbance for bird populations. Hunting on most of the dyked marshes is a factor that reduces the receptive capacity of the site for wintering ducks. Development of tourism and recreation activities (hiking, cycling, skating) in the dyked marshes constitutes a source of perturbation of the populations of domestic nesting birds. Farming activities are a potential source of eutrophication, especially in the dyked marshes. The growing of oysters in beds in the intertidal area accelerates the phenomena of siltation (fixation of sediments). Growth of oyster ponds in the dyked marshes constitutes a potential factor of reduction of the areas of certain habitats of community importance. The recent increase (1980s) of the populations of common

gulls has promoted by the construction of a domestic waste-treatment plant near the proposed site and has led to predation and competition for nesting sites used by several vulnerable species (échasse blanche, avocet, pieregardin tern). Two exotic ornamental plants (sénéçon en arbre) (*Baccharis halimifolia*) and Pampa grass (*Cortaderia selloana*) are beginning to colonize the dyked marshes.

25. Conservation measures taken: The entire proposed site (4452 hectares) is listed among the Special Protection Areas (SPAs) under the E.U. Directive on Wild Birds. At the site, 4097 hectares (87 per cent of the area of the proposed site) have been designated a Natura 2000 site under the Directives on Wild Birds and Habitats. Two management plans—document of aims—are currently being prepared for this site aimed at sustainable conservation of the community-wide ecological interests (fauna, flora, habitats) while taking into account socio-economic activities (Natura 2000 site no. 22 "Fier d'Ars" and site no. 23 "Dunes et Forêts de l'île de Ré").

Regulatory protection: Most of the terrestrial part of the site is classified as a protected site (decree of 24 June 1987). The protocol for development and management of the coastal marshes (signed on 6 December 1991) establishes a means for reviewing development projects for the marshes by groups of cantons and a departmental committee. It provides for a SPA for maintenance of ditches and natural meadows and adoption of a water level in harmony with the interests of the animal communities. The Lilleau des Niges Nature Reserve (decree of 31 January 1980), located in the heart of the proposed site, covers 119 hectares. It is managed by the Ligue pour la Protection des Oiseaux and the Association de Défense des Sites des Portes-en-Ré. An adjacent buffer area covers a total of 110 hectares in which boating and fishing are regulated. The nature reserve has been the object of a management plan since 1993 that was updated in 2002. All the bays of Fier d'Ars and Fosse de Loix are classified as maritime hunting reserves (order of 25 July 1973).

Legal protection: More than 60 hectares acquired by the Conservatoire de l'Espace Littoral et des Rivages Lacustres benefit from inalienable legal protection. A management plan has been prepared for the site of Basse-Lasse. The forest and dunes of Lizay (153 hectares) are part of the private domain of the government and are administered by the Office National des Forêts.

26. Conservation measures proposed but not yet implemented: The document of aims for Natura 2000 sites nos. 22 and 23, currently being prepared, will provide regulations in terms of development, growth and human activities. It proposes management measures on growth and agreed-upon requirements between those exploiting the land and the owners aimed at protecting geological interests. Some of the planned measures have already been taken into account in the requirements for agriculture (contrats territoriaux d'exploitation for the salt marshes). A Schéma de Mise en Valeur de la Mer (SMVM) has also been prepared for the maritime and shore part of the site but has not yet been adopted.

27. Current scientific research and facilities: The Ligue pour la Protection des Oiseaux monitors waterfowl populations throughout the proposed site. It has carried out surveys of the fauna (atlas of mammals, reptiles and amphibians) and plants and

the mapping of outstanding habitats of Natura 2000 site no. 22. The CEMAGREF has made studies of the effects of aquaculture on the salt marshes. The CNRS is now studying the behaviour of the Brent goose and the relationship between barnacles and eel grass is being studied for a doctoral thesis. The CREMAH has made several studies of hydrology and sedimentology at the site.

28. Current conservation education: The Maison du Fier is a centre for interpretation and promotion of awareness for the Fier d'Ars site. Property of the Conservatoire de l'Espace Littoral et des Rivages Lacustres, it is managed by the Ligue pour la Protection des Oiseaux in cooperation with the Communauté de Communes de l'île de Ré, the Commune of Les Portes-en-Ré and the Conseil Général of Charente-Maritime. The Maison du Fier organizes expositions on the natural and cultural heritage and on the human activities at the site. It also organizes recreational activities, initiation and awareness about the natural heritage for the general public and schoolchildren and attracted 50,000 visitors in 2001. The Marais Salant Ecomusée, property of the Conservatoire de l'Espace Littoral et des Rivages Lacustres, is a centre for environmental education. It seeks to promote visits to the marshes of the île de Ré and sites of salt extraction.

29. Current recreation and tourism: In the dyked marshes, cycling (up to 8800 bicycles per day at Ars-en-Ré), hiking, skating, horse riding (there are four equestrian centres), hunting, fishing and recreational aquaculture (oysters, shrimp, large prawns, eels and fish), cultural activities (painting, photography) and bird watching are practiced. On the shores and in the sea are practiced angling (which is increasing, up to 3176 persons for all of the île de Ré during the Spring tides) and line fishing, fishing in the fish ladders, recreational boating (there are two ports and two sailing schools at the site), sea kayaking and seaside activities. There are no data for the proposed site but the number of visitors to île de Ré is estimated based on the number of stays reported: 6,385,000 in 2000 (62 per cent in July-August). Inter-seasonal tourism (during the school vacations of November, Christmas, February and spring) is increasing.

30. Jurisdiction: This site is under the jurisdiction of the Charente-Maritime prefecture and the maritime prefecture of the Aquitaine region.

31. Management authority: Direction Régionale de l'Environnement Poitou-Charentes

32. Bibliographical references:

Annexes

Fauna and flora found at the proposed site

Populations of migratory and wintering waterfowl found at the proposed site

Dark-bellied Brent goose (<i>Branta bernicla bernicla</i>)
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White spoonbill (<i>Platalea leucorodia</i>)
Black-tailed godwit (<i>Limosa limosa islandica</i>)
Avocet (<i>Recurvirostra avosetta</i>)
Grey plover (<i>Pluvialis squatarola</i>)
Common snipe (<i>Calidris alpina</i>)

Monthly averages and maximum monthly population at the proposed site during 1992-2002

(In bold: populations beyond the Ramsar criterion)

Dark-bellied Brent goose (*Branta bernicla bernicla*)
(Ramsar criterion = 3000)

	Monthly averages	Maximum monthly population
January	6,324	9,560
February	4,643	7,096
March	2,573	4,276
April	-	-
May	-	-
June	-	-
July	-	-
August	-	-
September	-	-
October	6,906	12,500
November	12,097	19,620
December	8,483	11,510

The average of the wintering populations and the maximum populations recorded each year amply meet the Ramsar criterion.

White spoonbill (*Platalea leucorodia*)
(Ramsar criterion = 30)

1997	Mar	30
2001	Feb, Sep	34, 34
2002	Mar	33

The Ramsar criterion was fulfilled four times between 1997 and 2002.

Black-tailed godwit (*Limosa l. islandica*)
(Ramsar criterion = 1100)

	Monthly averages	Maximum monthly population
January	680	2100
February	496	1024

March	238	418
April	-	-
May	-	-
June	-	-
July	-	-
August	-	-
September	483	1101
October	1065	2800
November	926	2500
December	950	2965

Populations meeting the Ramsar criterion at the proposed site

1998	Oct, Nov	2800, 1100
1999	Sep, Oct, Dec	1101, 1230, 1280
2000	Oct, Nov, Dec	1142, 1200, 1100
2001	Jan, Oct, Nov, Dec	1460, 2794, 2500, 2965
2002	Jan	2100

The Ramsar has been met for each of the past five years.

Avocet (Recurvirostra avosetta)
(Ramsar criterion = 600)

	Monthly averages	Maximum monthly population
January	855	1835
February	688	1050
March	335	740
April	-	-
May	-	-
June	-	-
July	-	-
August	-	-
September	-	-
October	157	190
November	389	530
December	654	960

Populations meeting the Ramsar criterion at the proposed site

1992	Jan, Feb	720, 778
1993	Jan, Feb, Dec	790, 810, 710
1994	Jan, Feb, Dec	895, 630, 810
1995	Jan, Feb, Mar, Dec	1835, 1050, 740, 745
1996	Jan	850
1997	Feb	660
1998	Jan, Feb	760, 630
1999	Jan, Dec	675, 960
2000	Jan, Feb, Dec	700, 788, 624

2001 Jan, Dec	916, 1114
2002 Jan	901

The Ramsar criterion was met several times per year for the past ten years.

Grey plover (*Pluvialis squatarola*)
(Ramsar criterion = 1300)

	Monthly averages	Maximum monthly populations
January	1511	2357
February	947	1480
March	936	1375
April	422	760
May	137	180
June	78	360
July	64	160
August	394	570
September	652	1103
October	948	1430
November	1023	1416
December	1024	1345

Populations meeting the Ramsar criterion at the proposed site

1993 Jan	1690
1994 Jan	1310
1995 Jan, Feb, Mar	2300, 1435, 1375
1996 Mar	1370
1997 Feb	1480
1998 Jan, Oct, Nov, Dec	1800, 1430, 1416, 1345
1999 Jan, Oct	1455, 1410
2000 Jan, Sep	2357, 1595
2001 Jan	1564

The Ramsar criterion was met once or several times in the past nine years.

Common snipe (*Calidris alpina*)
(Ramsar criterion = 13,500)

	Monthly averages	Maximum monthly populations
January	13,131	17,050
February	10,518	14,960
March	6934	8950
April	988	1883
May	628	1439
June	81	230
July	245	540

August	414	703
September	665	1350
October	4626	8260
November	12,206	20,180
December	13,314	17,950

Sightings of more than the Ramsar criterion at the proposed site

1992	Jan, Nov	16,700; 20,180
1993	Jan, Nov	16,700; 16,920
1994	Jan, Feb, Dec	17,050; 14,800; 16,060
1995	Jan, Feb, Nov, Dec	14,900; 14,960, 17,400, 17,950
1996	Jan, Dec	16,645, 14,840
1997	Dec	15,665
1998	Jan	13,760
1999	Dec	16,370

The Ramsar criterion was met several times per year between 1992 and 1999.